AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): An anode of a power generation cell for a solid oxide fuel cell, comprising:

~~wherein~~ B-doped ceria particles that are separately attached to a frame surface of porous nickel having a network frame structure~~,~~.

wherein ~~(~~B is at least one ~~or more~~ of Sm, Gd, Y, and Ca~~)~~.

Claim 2 (currently amended): ~~An~~ The anode of claim 1~~a power generation cell for a solid oxide fuel cell~~,

wherein the B-doped ceria particles comprise:

~~(B is one or more of Sm, Gd, Y, and Ca)~~ large diameter ceria particles having an average particle size of 0.2 to 0.6 μm that are separately attached to a frame surface of porous nickel having a network frame structure, and small diameter ceria particles ~~B-doped ceria particles~~ having an average particle size of 0.01 to 0.09 μm that are separately attached between the large diameter ceria particles.

Claim 3 (currently amended): ~~An~~ The anode of claim 1~~a power generation cell for a solid oxide fuel cell~~,

wherein the B-doped ceria particles ~~of claim 1 or the B-doped ceria particles including the large diameter ceria particles and the small diameter ceria particles of claim 2~~ are expressed by a formula of $Ce_{1-m}B_mO_2$, and

wherein m is between 0 and 0.4~~(B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$)~~.

Claim 4 (currently amended): A power generation cell for a solid oxide fuel cell, comprising:

an electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;

a porous cathode which is formed on a side of the electrolyte; and

a porous anode which is formed on another side of the electrolyte,

wherein the anode is that of claim 1.

Claim 5 (currently amended): The power generation cell for the solid oxide fuel cell according to claim 4,

wherein the lanthanum gallate-based oxide ion conductor is expressed by a formula of $La_{1-X}Sr_XGa_{1-Y-Z}Mg_YA_ZO_3$, and

wherein ~~(~~A is ~~one or more~~ at least one of Co, Fe, Ni, and Cu, X is 0.05 to 0.3, Y is 0 to 0.29, Z is 0.01 to 0.3, and Y+Z is 0.025 to 0.3~~)~~.

Claim 6 (currently amended): A solid oxide fuel cell comprising the power generation cell for the solid oxide fuel cell according to claim ~~4 or 5~~.

Claim 7 (currently amended): A power generation cell for a solid electrolyte fuel cell, comprising:

a solid electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;

a porous cathode which is formed on a side of the solid electrolyte; and

a porous anode which is formed on another side of the solid electrolyte and comprises:~~,~~

~~wherein the anode includes~~ a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ and nickel, B-doped ceria particles are separately attached to a frame surface of nickel having a porous frame structure in the sintered body, the sintered body ~~has~~ having a nickel composition gradient so that a nickel content is increased in a thickness direction, such that the nickel content of an innermost surface of the sintered body ~~which~~ that is in contact with the solid electrolyte is 0.1 to 20 vol%, and the nickel content of an outermost surface of the sintered body ~~which~~ that is farthest from the solid electrolyte is 40 to 99 vol%, and

wherein B is at least one of Sm, Gd, Y, and Ca, and $0<m\leq 0.4$.

Claim 8 (currently amended): ~~A power generation cell for a solid electrolyte fuel cell, comprising:~~

~~a solid electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;~~

~~a porous cathode which is formed on a side of the solid electrolyte; and~~

~~a porous anode which is formed on another side of the solid electrolyte,~~The Power generation cell of claim 7,

wherein ~~the anode includes a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ (B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$) and nickel,~~ the sintered body includes a plurality of layers ~~which has~~ having different nickel contents and in which B-doped ceria particles are separately attached to a frame surface of nickel having a porous frame structure,~~, and the layers having the different nickel contents include an innermost layer, which is in contact with the solid electrolyte and has the nickel content of 0.1 to 20 vol%, and an outermost layer, which is separated from the solid electrolyte at least by the innermost layer and has the nickel content of 40 to 99 vol%.~~

Claim 9 (currently amended): ~~A~~ The power generation cell of claim 8 ~~for a solid electrolyte fuel cell, comprising:~~

~~a solid electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;~~

~~a porous cathode which is formed on a side of the solid electrolyte; and~~

~~a porous anode which is formed on another side of the solid electrolyte,~~

wherein the anode further includes ~~a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ (B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$) and nickel, the sintered body includes a plurality of layers which has different nickel contents and in which B-doped ceria particles are separately attached to a frame surface of nickel having a porous frame structure, the layers having the different nickel contents include an innermost layer, which is in contact with the solid electrolyte and has the nickel content of 0.1 to 20 vol%, an outermost layer, which is layered so as to be farthest from the solid electrolyte and has the nickel content of 40 to 99~~

~~vol%, and~~ an intermediate layer, which is formed between the innermost and the outermost layers and has ~~a single layer or two or more layers, and the intermediate layer including the single layer or two or more layers~~ at least one layer that is layered so that the nickel content is continuously or intermittently increased in the direction from the innermost layer to the outermost layer ~~which is farthest from the solid electrolyte~~.

Claim 10 (currently amended): ~~A~~ The power generation cell of claim 7 ~~for a solid electrolyte fuel cell, comprising:~~

~~a solid electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;~~

~~a porous cathode which is formed on a side of the solid electrolyte; and~~

~~a porous anode which is formed on another side of the solid electrolyte,~~

wherein the ~~anode includes a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ (B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$) and nickel, the sintered body includes~~ B-doped ceria particles include large diameter B-doped ceria particles having, ~~which have~~ an average particle size of 0.2 to 0.6 μm ~~(large diameter ceria particle) and~~ which are separately attached to ~~a~~ the frame surface of nickel having a porous frame structure, and small diameter B-doped ceria particles, ~~which have~~ having an average particle size of 0.01 to 0.09 μm ~~(small diameter ceria particle) and~~ which are separately attached between the large diameter ceria particles, ~~the sintered body also has a nickel composition gradient so that the nickel content is increased in a thickness direction, the nickel content of an innermost surface of the sintered body which is in contact with the solid electrolyte is 0.1 to 20 vol%, and the nickel content of an outermost surface of the sintered body which is farthest from the solid electrolyte is 40 to 99 vol%.~~

Claim 11 (currently amended): A power generation cell for a solid electrolyte fuel cell, comprising:

a solid electrolyte which is formed of a lanthanum gallate-based oxide ion conductor;

a porous cathode which is formed on a side of the solid electrolyte; and

a porous anode which is formed on another side of the solid electrolyte,

wherein the anode includes a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ and nickel, the sintered body includesing a plurality of layers ~~which has~~ having different nickel contents and in which large diameter ceria particles are separately attached to a frame surface of nickel having a porous frame structure and small diameter ceria particles are separately attached between the large diameter ceria particles, and the layers ~~having the different nickel contents~~ include an innermost layer, which is in contact with the solid electrolyte and has ~~the~~ a nickel content of 0.1 to 20 vol%, and an outermost layer, which is separated from the solid electrolyte at least by the innermost layer and has ~~the~~ a nickel content of 40 to 99 vol%, and~~.~~

wherein B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$.

Claim 12 (currently amended): ~~A~~ The power generation cell of claim 11~~for a solid electrolyte fuel cell, comprising:~~

~~a solid electrolyte which is formed of a lanthanum gallate based oxide ion conductor;~~

~~a porous cathode which is formed on a side of the solid electrolyte; and~~

~~a porous anode which is formed on another side of the solid electrolyte,~~

wherein the anode includes ~~a sintered body of B-doped ceria expressed by a formula of $Ce_{1-m}B_mO_2$ (B is one or more of Sm, Gd, Y, and Ca, and $0<m\leq0.4$) and nickel, the sintered body includes a plurality of layers which has different nickel contents and in which large diameter ceria particles are separately attached to a frame surface of nickel having a porous frame structure and small diameter ceria particles are separately attached between the large diameter ceria particles, the layers having the different nickel contents include an innermost layer, which is in contact with the solid electrolyte and has the nickel content of 0.1 to 20 vol%, an outermost layer, which is layered so as to be farthest from the solid electrolyte and has the nickel content of 40 to 99 vol%, and~~ at least one ~~an~~ intermediate layer, which ~~is formed between the innermost and the outermost layers and has a single layer or two or more layers, and the intermediate layer including the single layer or two or more layers~~ is layered so that the nickel content is ~~continuously or intermittently~~ increased in the direction from the innermost layer to the outermost layer which is farthest from the solid electrolyte.

Claim 13 (currently amended): The power generation cell for the solid electrolyte fuel cell according to ~~any one of claims~~ claims ~~8, 9, 11, and 12~~,

wherein a thickness of the innermost layer is 0.5 to 5 μm, and a thickness of the outermost layer is 10 to 50 μm.

Claim 14 (currently amended): The power generation cell for the solid electrolyte fuel cell according to ~~any one of claims~~ claim 7, ~~8, 9, 10, 11, 12, and 13,~~ wherein the lanthanum gallate-based oxide ion conductor is expressed by a formula of $La_{1-X}Sr_XGa_{1-Y-Z}Mg_YA_ZO_3$, and

wherein ~~(~~A is one or more of Co, Fe, Ni, and Cu, X is 0.05 to 0.3, Y is 0 to 0.29, Z is 0.01 to 0.3, and Y+Z is 0.025 to 0.3~~)~~.

Claim 15 (currently amended): A solid electrolyte fuel cell comprising the power generation cell for the solid electrolyte fuel cell according to ~~any one of claims~~ claim 7~~, 8, 9, 10, 11, 12, 13, and 14~~.

Claim 16 (new): The power generation cell for the solid electrolyte fuel cell according to claim 11 wherein a thickness of the innermost layer is 0.5 to 5 μm, and a thickness of the outermost layer is 10 to 50 μm.

Claim 17 (new): The power generation cell for the solid electrolyte fuel cell according to claim 11, wherein the lanthanum gallate-based oxide ion conductor is expressed by a formula of $La_{1-X}Sr_XGa_{1-Y-Z}Mg_YA_ZO_3$, and

wherein A is one or more of Co, Fe, Ni, and Cu, X is 0.05 to 0.3, Y is 0 to 0.29, Z is 0.01 to 0.3, and Y+Z is 0.025 to 0.3.

Claim 18 (new): A solid electrolyte fuel cell comprising the power generation cell for the solid electrolyte fuel cell according to claim 11.

Claim 19 (new): The power generation cell of claim 7 wherein the nickel composition gradient is such that the nickel content increases continuously from the innermost surface to the outermost surface.